



Used Oil Facts

Hazardous Waste and Toxics Reduction Program

November 2002, Publication #02-04-006

Used Oil is defined as any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result is contaminated by physical or chemical impurities.

Do you use any of these types of fluids?

Brake fluid

Hydraulic oil

Power steering fluid

Cutting oil

Lubricating oil

Transaxle fluid

Differential oil

Motor oil

Transmission fluid

Gear oil

If you do, use the information in this publication to help make the best choices in managing them. Used oil can easily be contaminated with other types of waste and if managed improperly may threaten the safety of you, your co-workers, or the environment. It can also place your community at risk. Consider how your daily actions affect the environment and take an active interest in pollution prevention. **Your role is vital in helping us protect, preserve and enhance Washington State's environment for the benefit of current and future generations!**

What about other oily wastes?

Certain oily wastes **can be managed** as used oil even when they do not fit the used oil definition. For instance, a material that is not a dangerous waste, but is contaminated with or contains used oil may be managed under the used oil rule. A good example of this is oily rags. A rag (a **product**) is used for its intended purpose (to wipe up an oil spill) and, after use, may be managed under the used oil regulations. Other wastes that may fit into this category include oily bilge water, oily waste from oil/water separators, and oily wastewaters.

Used oil that is removed from material containing or contaminated with used oil can also be managed under the used oil regulations. Examples may include used oil drained from an oil filter, engine oil pan, or oil waste removed from oil/water separators.

Any type of oily waste that doesn't meet the definition or exceptions mentioned above **cannot be managed** under the used oil regulations. Some examples include brake cleaner, solvents used for degreasing (including petroleum distillates and mineral spirits), paint and oily paint waste, oil-based inks, antifreeze, degreasers, and carburetor cleaners. These products would most likely designate as dangerous waste when disposed. Consult the product's Material Safety Data Sheet (MSDS) to help identify any constituent of concern.

In addition, even though the following wastes fit the definition of used oil, they cannot be managed as used oil for the purpose of burning:

- ▶ Used oil which designates as extremely hazardous waste (EHW), usually for high levels of halogenated organic compounds.
- ▶ Certain metal-working oils with any amount of chlorinated compounds in the formulation; and
- ▶ PCB oils. (PBC oils commonly come from transformers.)

LOOK INSIDE TO LEARN MORE ABOUT USED OIL AND OILY WASTES, AND HOW TO MANAGE THEM CORRECTLY

Material containing or otherwise contaminated with used oil

The term “material containing or otherwise contaminated with used oil when burned for energy recovery” refers to situations when an oily waste, allowed to be managed under the used oil regulations, combines with a material during the intended use of that material. (Note: This only applies if the material that combines with the oily waste is not a dangerous waste.) Examples may include: a spill of crankcase oil coming in contact with kitty litter used to clean up the spill and oil filters containing used oil.

Mixing Used Oil

No solid waste or dangerous waste can be mixed into or with used oil. If this occurs, the mixture is no longer considered used oil, and could be a dangerous waste. Examples of the types of wastes that cannot be mixed with used oil would include spent solvents, paints, inks, “cleaners,” plastics, and radiator hoses.

Legitimate unused fuel products, such as gasoline, kerosene, diesel, or jet-A fuel may be added to used oil if the mixture is to be burned for energy recovery. An example would be gasoline that was drained from a car at an automobile recycling facility and added to used oil. **Warning:** Mixing gas, kerosene, or other fuels with used oil may produce a “rich mixture” that may present safety issues when attempting to burn in a space heater. This is not a recommended practice.

What is On-Specification and Off-Specification Used Oil?

To qualify as on-specification used oil, the oil to be burned for energy recovery cannot exceed any of the following limits. In general, if your used oil is just crankcase used oil and not mixed with anything, it will be on-specification. If you choose not to test for the on-specification status, or do not have knowledge¹ of your used oil it must be managed as off-specification.

Used Oil Specifications	
Constituent/property	Allowable on specification level
Arsenic*	5 ppm maximum
Cadmium*	2 ppm maximum
Chromium*	10 ppm maximum
Lead*	100 ppm maximum
Flash point+	100° F minimum
Total Halogens# for Rebuttable Presumption	1,000 ppm minimum
Total Halogens#	4,000 ppm maximum

- * Analytical test to be used is SW-846, Methods 3040/3050
- + Analytical test to be used is SW-846, Method 1010
- # Analytical test to be used is SW-846, Method 8021

¹ Knowledge is personally knowing how the used oil was generated, where it came from and what sources of contamination are possible. Knowledge also includes making decisions on new batches of used oil based on testing results of previous batches.

How To Test Used Oil

If your used oil meets the definition of used oil or meets the conditions of being managed as used oil and is to be recycled, no traditional dangerous (hazardous) waste designation testing is required. The “testing” that is required by the generator is referred to as the “rebuttable presumption.” The oil must be tested and if found to contain greater than 1,000 ppm total halogens is presumed to be a dangerous waste. If this happens, contact your nearest Ecology Regional Office for further assistance. Although the analytical test to run is SW-846, method 8021 or 8260, a chlorinated compound detection test kit (aka “Chlor-D-Tect”) is often used as a less expensive screening test. While the Chlor-D-Tect is an EPA approved test method, some companies use a hand-held halogen detection instrument (aka “Sniffer”) which is not approved by EPA. In relation to used oil, the “sniffer method” produces incomplete, and unreliable results since it was designed to detect leaks in air pollution control equipment. Instead of testing, if you know the source of the halogens, such as a formulation of oil containing chlorinated paraffins or from salty bilge water, you may use that knowledge. If knowledge is used, supporting documentation must be kept at your site.

**Unmixed used oil is easier to identify and manage.
Make smart choices!**

In addition to testing for halogens, generators must also have knowledge of additional properties of their used oil that may prohibit burning it as used oil. It may be necessary to test the oil to find out. These additional properties or prohibitions include:

- ✓ PCB oils (W001) by knowledge, (PCB oils commonly come from transformers). These oils are state or federally regulated at greater than 2.0 ppm.
- ✓ Chlorinated metalworking fluids, by knowledge (MSDSs may be useful).
- ✓ Ethylene glycol-based fluids (e.g., antifreeze), by knowledge.
- ✓ Used oil mixed with dangerous waste
 - By knowledge most of the time.
 - Testing for some, results from the rebuttable presumption are useful.
- ✓ Used oil which designates as EHW (Extremely Hazardous Waste)
 - Determined by testing according to sections WAC 173-303-100(5) and (6); which refer to the Chemical Testing Methods for Designating Dangerous Wastes publication, number 97-407.

Transporting Used Oil

As a generator, if you transport more than 55 gallons of used oil you must deliver the shipment to an approved used oil collection center. The center must collect and retain the following information about you: your name, address, telephone number, date of delivery and amount being delivered. For a list of oil collection centers and used oil transporters, refer to the *Hazardous Waste Service Directory*, now available online at <http://www.ecy.wa.gov/apps/hwtr/hwsd/default.htm> (Also see Additional Resources on page 5.)

Use Best Management Practices For Used Oil:

- ▶ Use labels and signs to segregate used oil from other wastes at your business and train your employees in the importance of keeping wastes separate.
- ▶ Store used oil in a leak-proof, closed container.
- ▶ Drain and collect all oil on a covered and curbed, impermeable surface area away from drains.
- ▶ Do not open, handle, manage or store containers and tanks in a manner that may cause them to leak or rupture.
- ▶ Use tanks and containers that are in good condition (no rust, structural defects or deterioration) to store used oil.
- ▶ Be prepared to stop, contain and clean up any releases of used oil.
- ▶ Take steps to prevent the accidental contamination of your used oil with even small amounts of solid or dangerous waste.
- ▶ Label containers, aboveground tanks, and fill pipes with the words “Used Oil.”
- ▶ Physically inspect all used oil storage containers and tanks on a regular basis.
- ▶ Know the on-spec/off-spec status of your used oil before it leaves your site.
- ▶ Know whether your used oil is prohibited from burning as used oil prior to it leaving your site.
- ▶ Know how your used oil will be recycled before it leaves your site.
- ▶ If possible, keep all containers stored inside or under cover.

Burning Used Oil in Space Heaters

There are several sources of used oil available to burn in your space heater in addition to your own:

1. Used oil from do-it-yourself oil changers who generate the used oil as household waste;
2. If you own other businesses that generate used oil, you can burn the used oil produced at those sites in your on-site space heater as an “aggregation point;” and
3. On-specification used oil from a marketer with records of the shipments.²

Requirements for a Used Oil Space Heater

A used oil space heater must be designed for a maximum capacity of not more than 0.5 million BTUs per hour. The combustion gases from the heater must be vented to the outside, to prevent health hazards. The heater can only burn your oil, do-it-yourself used oil and on-specification used oil. It is acceptable for one shop to have more than one space heater. Mixing of different used oils is okay, but burning mixed used oils of significantly different viscosities has been reported to cause oil heater feed lines to clog.

² In this case the used oil must be tested to show it is on-specification prior to delivery, or you could be regulated as a marketer or a processor of used oil. You cannot assume the used oil is on-specification before or as it is being delivered. Those who supply the on-specification used oil must have analytical test results or knowledge proving that the used oil meets the specifications.

Sending Used Oil Off-Site for Burning:

The following is a list of acceptable places where generators can send used oil for burning:

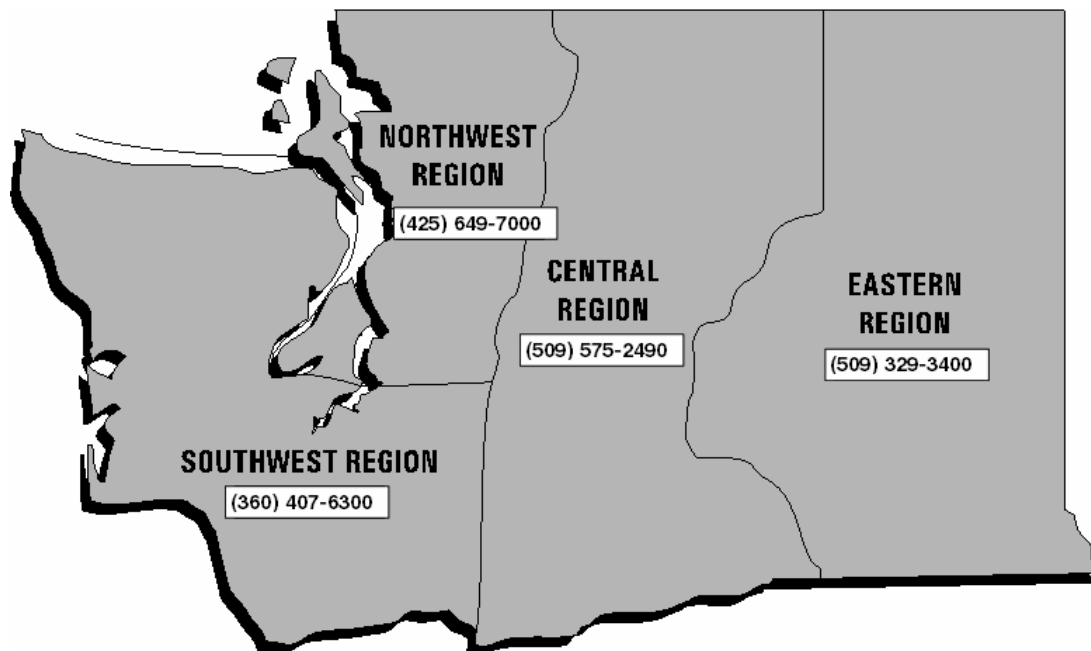
- ✓ A facility that has notified Ecology as an off-specification used oil burner
- ✓ A facility with a boiler, industrial furnace or space heater that accepts on-spec used oil
- ✓ A used oil collection center
- ✓ A facility that has notified Ecology as a used oil processor
- ✓ Another business site you own that may have a space heater if that site complies with the aggregation point requirements in the regulations.

Although this publication focuses on burning used oil for energy recovery as the main recycling avenue, Ecology strongly supports the re-refining of used oil back into a useable oil product. To assure used oil is well suited for re-refining, Ecology has prohibited the mixing of any other material with used oil. “No mixing” will enhance this recycling option. If you fail to meet the requirements in this paper, you may be legally accountable for any problems your material causes, including liability for site clean up actions in the future.

Additional Resources

- *NEW! Interactive Hazardous Waste Service Directory Online.* Includes a list of used oil collection centers, transporters and much, much more! <http://www.ecy.wa.gov/apps/hwtr/hwsd/default.htm>
- *Chemical Testing Methods for Designating Dangerous Wastes*, publication number 97-407. Testing used oil for dangerous waste designation. Web address at <http://www.ecy.wa.gov/biblio/971256hwtr.html>
- *Used Oil Disposal Prohibitions, Shoptalk*, Spring 1992, Volume 2, issue 2. View this and other issues of HWTR's free newsletter *Shoptalk* at <http://www.ecy.wa.gov/programs/hwtr/shoptalkonline>
- *Recovering Heat Energy While Burning Dangerous Waste*, publication number 94-085. Updated guidance on the status of “units” that recover heat energy from burning dangerous waste. To request a copy call (360) 407-7472, (360) 407-6752, or e-mail dzin461@ecy.wa.gov.

Department of Ecology Regional Offices And Spill Reporting Numbers



The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status or sexual orientation. If you have special accommodation needs or require this document in alternative format, please contact the Hazardous Waste and Toxics Reduction Program at (360) 407-6700 (voice) or 711 or (800) 833-6388 (TTY).